

CLAIMS

1. A die head suitable for preparation of a dual textured pet food having a core and a shell surrounding or essentially surrounding the core, the die head attached to or an integral part of an extruder, which comprises
 - a) at least two shell flow areas through which an extruded shell composition flows,
 - b) a shell flow control regulator which is capable of impinging upon the shell flow,
 - c) a core inlet tube located post shell flow control regulator, its orifice in the shell flow, and delivering core composition to the shell flow wherein the shell composition essentially or totally envelops the core composition
 - d) the shell enveloped core composition exiting the die orifice.
2. The die head of claim 1 wherein the shell flow control regulator is located at an angle of about 75 to 90° to the shell flow.
3. The die head of claim 1 wherein the shell control regulator through its ability to impinge upon the shell flow controls the pressure of the shell flow so as to at least essentially balance the shell flow of one individual shell flow area to another shell flow area.
4. The die head of claim 1 wherein post shell core composition die orifice and attached or integral thereto and of a cross section larger than the cross section of the orifice is a guide chamber of such a length and a cross section that the shell core composition flowing through said orifice is capable of expansion, thereby inhibiting crossover of the shell core composition after leaving the guide chamber.
5. The die head of claim 1 wherein the core inlet tube orifice is of such a cross sectional size and located a distance from the die orifice such that the velocity of the shell composition exiting the die opening is closely matched to the velocity of the core composition exiting the core outlet or die orifice.
6. A die head suitable for preparation of a dual textured pet food having a core and a shell surrounding or essentially surrounding the core, the die attached to or an integral part of an extruder which comprises:
 - a) at least two shell flow areas through which an extruded shell composition flows.
 - b) a core inlet tube, its orifice in the shell flow, the orifice of such a cross sectional size and located a distance from the die opening such that the velocity of the shell composition exiting the die opening is closely matched to the velocity of the core composition.

7. A method of preparing a dual textured pet food wherein a shell completely or essentially envelops a core which comprises preparing a core composition in a vessel capable of being heated to at least about 140°F, transferring core composition to a core inlet tube of the die head of claim 1, preparing a shell composition of at least about 30 wt. % grains and mixing in a mixer, transporting to an extruder wherein the shell composition is subject to radial mixing, passing the core composition into a die head of claim 1 wherein the shell envelops or essentially envelops the core and exits the die head as a shell enveloped core.
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